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Remy Collier

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EXAMINER

KRYLOVA, IRINA

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Attachment to Advisory Action

1. Applicant's amendment filed on November 10, 2010 has been fully considered. Specifically, independent claim 6 has been amended to include the limitation of the hydrocarbon copolymer consisting of styrene and divinylbenzene monomers. The "consisting of" transition phrase limits the hydrocarbon copolymer to styrene and divinylbenzene monomer units only. An updated prior art search has uncovered a new reference US 5,760,097 which specifically discloses porous crosslinked polymeric microbeads produced by HIPE, specifically consisting of styrene and divinylbenzene monomers only (col. 2, lines 56-58; Table 1).

Thus, if the amendment were entered it would necessitate withdrawal of the rejections of record and further application of rejections over a newly uncovered reference by itself or in combination. Therefore, since entry of the amendment will not place the application in condition for allowance, and due to new search and examination issues, the amendment will not be entered. It is also noted that applicant's amendment is untimely since it comes after a final rejection and there is no reason as to why it could not have been submitted earlier.

2. Regarding the rejection of claims 6, 8, 11-13, 16-18 under 35 U.S.C. 103(a) as being unpatentable over **Hird et al** (US 2003/0091610) in view of **Catalfamo et al** (US 6,369,121) and **Ko et al** (US 2003/0134918), as evidenced by **Cawiezel et al** (US 5,633,220) and **Lin et al** (US 5,948,855); claims 14-15 under 35 U.S.C. 103(a) as being unpatentable over **Hird et al** (US 2003/0091610) in view of **Catalfamo et al** (US

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6,369,121) and **Ko et al** (US 2003/0134918), as evidenced by **Cawiezel et al** (US 5,633,220), **Lin et al** (US 5,948,855) and **Sasabe et al** (US 2003/0036575), as evidenced by Lenntech/deionized water flyer; claim 11 under 35 U.S.C. 103(a) as being unpatentable over **Hird et al** (US 2003/0091610) in view of **Catalfamo et al** (US 6,369,121) and **Ko et al** (US 2003/0134918), as evidenced by **Cawiezel et al** (US 5,633,220) and **Lin et al** (US 5,948,855) in further view of **Mork et al** (US 6,303,834), Applicant argues that instant claim 6 as amended recites a polymer foam, which is formed of a crosslinked, exclusively hydrocarbon copolymer, the hydrocarbon copolymer consisting of styrene and divinylbenzene, and which exhibits a density at least 6-20 mg/cc and cells with a mean cell diameter of between 2 and 10 microns. whereas **Hird et al** discloses a list of monomers and simply mentions that these monomers could be in combination and in examples ([0142]) **Hird et al** recites divinylbenzene in combination with ethyl styrene and 1,6-hexanediol diacrylate; **Hird et al** does not disclose polymer foam having both density and cell diameter limitations as recited in instant claim 6, and **Hird et al** does not disclose the use of ethylbenzene.

3. Examiner disagrees.

1) As stated above, the amendment is not entered, thus rendering Applicants arguments moot. Further, **Hird et al** discloses that both styrene ([0052]) and DVB ([0053]) may be used in HIPE polymerization of Hird et al, therefore, it would have been obvious to a skilled artisan to choose styrene and divinylbenzene comonomers as well. Case law holds that the selection of a known material based on its suitability for its

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intended use supports prima facie obviousness. *Sinclair & Carroll Co vs. Interchemical Corp.*, 325 US 327, 65 USPQ 297 (1045). Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. See *In re Ruff* 118 USPQ 343 (CCPA 1958).

2) Though **Hird et al** does not disclose foam having cell diameter and density as claimed in the instant invention, however, since the crosslinked foam of **Hird et al** in view of **Catalfamo et al**, **Ko et al**, **Cawiezel et al** and **Lin et al** is produced by the process identical to that claimed in the instant invention (HIPE polymerization), therefore, it's properties, including cell diameter and density, will intrinsically be identical to those as claimed in the instant invention. Furthermore, though **Hird et al** does not recite the use of ethylbenzene, however, as evidenced by **Cawiezel et al**, ethylbenzene is used in the art as a solvent in internal phase water-in-oil emulsions, and it would have been obvious to a skilled artisan to use ethylbenzene solvent in the process of **Hird et al** in view of **Catalfamo et al**, **Ko et al**, **Cawiezel et al** and **Lin et al** as well.

4. Regarding the rejections of claims 6, 8, 11-13, 16-18 under 35 U.S.C. 103(a) as being unpatentable over **DesMarais et al** (US 5,331,015) in view of **Catalfamo et al** (US 6,369,121) and **Ko et al** (US 2003/0134918), as evidenced by **Cawiezel et al** (US 5,633,220) and **Lin et al** (US 5,948,855), claims 14-15 under 35 U.S.C. 103(a) as being unpatentable over **DesMarais et al** (US 5,331,015) in view of **Catalfamo et al** (US

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6,369,121) and **Ko et al** (US 2003/0134918), as evidenced by **Cawiezel et al** (US 5,633,220) and **Lin et al** (US 5,948,855), in further view of **Sasabe et al** (US 2003/0036575), as evidenced by Lenntech/deionized water flyer, and claim 11 under 35 U.S.C. 103(a) as being unpatentable over **DesMarais et al** (US 5,331,015) in view of **Catalfamo et al** (US 6,369,121), **Ko et al** (US 2003/0134918), as evidenced by **Cawiezel et al** (US 5,633,220) and **Lin et al** (US 5,948,855), in further view of **Mork et al** (US 6,303,834), Applicant argues that **DesMarais et al** discloses the foam wherein both the monofunctional glassy principal monomer (styrene-based monomer) and monofunctional rubbery comonomer must be present in the oil phase, wherein the instant claim 6 as amended discloses the foam consisting of styrene and divinylbenzene monomers only.

5. Examiner disagrees.

As stated above, the amendment is not entered, thus rendering Applicants arguments moot.

6. Regarding the rejections of claims 6, 8, 11-18 under 35 U.S.C. 103(a) as being unpatentable over **Sasabe et al** (US 2003/0036575) in view of **Catalfamo et al** (US 6,369,121), **Ko et al** (US 2003/0134918), **Cawiezel et al** (US 5,633,220), **Lin et al** (US 5,948,855) and Lenntech/deionized water flyer; claim 11 under 35 U.S.C. 103(a) as being unpatentable over **Sasabe et al** (US 2003/0036575) in view of **Catalfamo et al** (US 6,369,121), **Ko et al** (US 2003/0134918), **Cawiezel et al** (US 5,633,220), **Lin et al**

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(US 5,948,855) and **Mork et al** (US 6,303,834), Applicant argues that **Sasabe et al** does not specifically teach or suggest a cross-linked, exclusively hydrocarbon copolymer consisting of styrene and divinylbenzene monomers, but rather discloses styrene and divinylbenzene among other monomers, and does not disclose polymer foam meeting both the density and cell diameter of claim 6.

7. Examiner disagrees.

1) As stated above, the amendment is not entered, thus rendering Applicants arguments moot. Further, **Sasabe et al** discloses that both styrene ([0073]) and DVB ([0077]) may be used in HIPE polymerization of **Sasabe et al**, therefore, it would have been obvious to a skilled artisan to choose styrene and divinylbenzene comonomers as well. Case law holds that the selection of a known material based on its suitability for its intended use supports prima facie obviousness. *Sinclair & Carroll Co vs. Interchemical Corp.*, 325 US 327, 65 USPQ 297 (1045). Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. See *In re Ruff* 118 USPQ 343 (CCPA 1958).

2) Though **Sasabe et al** does not disclose foam having cell diameter and density as claimed in the instant invention, however, since the crosslinked foam of **Sasabe et al** (in view of **Catalfamo et al**, **Ko et al**, **Cawiezel et al**, **Lin et al** (US 5,948,855) and Lenntech/deionized water flyer is produced by the process identical to that claimed in

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the instant invention (HIPE polymerization), therefore, its properties, including cell diameter and density, will intrinsically be identical to those as claimed in the instant invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina Krylova whose telephone number is (571)270-7349. The examiner can normally be reached on Monday-Friday 8:00am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Irina Krylova/
Examiner, Art Unit 1764

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/Vasu Jagannathan/

Supervisory Patent Examiner, Art Unit 1764